

WHAT IS CLAIMED IS:

1. A loudspeaker diaphragm having a portion affixed with a coil, comprising:

5 an edge portion located outside of the portion affixed with the coil; and

a center portion located inside of the portion affixed with the coil; wherein

the center portion is provided with a rib.

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2. The loudspeaker diaphragm according to claim 1,

wherein

the edge portion has a convex portion having a protruding shape in cross section, and

15 the rib has a height lower than a height of the edge portion in cross section.

3. The loudspeaker diaphragm according to claim 1,

wherein

20 the coil is shaped so as to extend along a first direction, and

a direction in which the rib is provided includes a component of a second direction perpendicular to the first direction.

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4. The loudspeaker diaphragm according to claim 3,  
wherein

the rib is provided so as to extend along the second  
direction.

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5. The loudspeaker diaphragm according to claim 3,  
wherein

a plurality of said ribs are provided to form a lattice  
shape at a predetermined angle with respect to the first direction.

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6. The loudspeaker diaphragm according to claim 1,  
wherein

the rib is provided on a side of the portion affixed  
with the coil, and has a height lower than a height of the coil.

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7. The loudspeaker diaphragm according to claim 1,  
wherein

the rib is formed integrally with the center portion.

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8. The loudspeaker diaphragm according to claim 1,  
wherein

the rib is attached to the center portion.

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9. The loudspeaker diaphragm according to claim 1,  
wherein

the coil is shaped so as to extend along a first direction,  
the edge portion is shaped so as to have an elasticity  
in the first direction equal to an elasticity in a second direction  
perpendicular to the first direction, and

5 the edge portion is shaped so as to extend along the  
first direction.

10. The loudspeaker diaphragm according to claim 1,

wherein

10 the coil is a printing voice coil formed integrally with  
the loudspeaker diaphragm.

11. The loudspeaker diaphragm according to claim 1,

wherein

15 the loudspeaker diaphragm is molded after being formed integrally with the coil affixed thereto.

12. The loudspeaker diaphragm according to claim 1,

wherein

20 at least part of a portion along an outer rim of the  
coil on the edge portion protrudes from a side of the portion affixed  
with the coil.

13. A loudspeaker comprising:

25 the loudspeaker diaphragm according to claim 1;

a housing supporting the loudspeaker diaphragm;  
a voice coil affixed to the loudspeaker diaphragm; and  
a magnetic circuit.

5           14. The loudspeaker according to claim 13, wherein  
              the magnetic circuit includes at least two magnets placed  
              at both sides with respect to a vibrating direction of the  
              loudspeaker diaphragm so as to sandwich the voice coil.

10           15. An electronic device comprising the loudspeaker  
              according to claim 14.

15           16. The loudspeaker according to claim 13, wherein  
              said at least two magnets are placed so as to be magnetized  
              in directions opposite to each other with respect to a vibrating  
              direction of the loudspeaker diaphragm.

20           17. An electronic device comprising the loudspeaker  
              according to claim 16.

25           18. An electronic device comprising the loudspeaker  
              according to claim 13.

19. A loudspeaker diaphragm having a portion affixed  
25 with a coil, comprising:

an edge portion located outside of the portion affixed with the coil; and

a center portion located inside of the portion affixed with the coil, wherein

5 the center portion is provided with a strengthening portion which is flat in cross section and is thicker than the edge portion.

20. A loudspeaker diaphragm extending along a first  
10 direction,

a coil being affixed to a portion of the loudspeaker diaphragm and extends along the first direction,

the loudspeaker diaphragm comprising:

an edge portion located outside of the portion affixed  
15 with the coil; and

a center portion located inside of the portion affixed with the coil, wherein

the edge portion has a shape so that an elasticity in  
the first direction is approximately equal to an elasticity in  
20 a second direction perpendicular to the first direction.

21. The loudspeaker diaphragm according to claim 20,  
wherein

the edge portion includes a convex portion having a  
25 protruding shape in cross section and annularly surrounding the

portion affixed with the coil, and

a height of a portion of the convex portion that is oriented in the first direction is higher than a height of a portion of the convex portion that is oriented in the second direction.

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22. The loudspeaker diaphragm according to claim 20,  
wherein

portions on the edge portion which are located on both sides of the coil with respect to a center axis of the coil in the first direction are each provided with a rib extending approximately in parallel with the second direction.

10 23. The loudspeaker diaphragm according to claim 20,  
wherein

15 the coil is a printing voice coil formed integrally with the loudspeaker diaphragm.

24. The loudspeaker diaphragm according to claim 20,  
wherein

20 the loudspeaker diaphragm is molded after being formed integrally with the coil affixed thereto.

25. The loudspeaker diaphragm according to claim 20,  
wherein

25 at least part of a portion along an outer rim of the

coil on the edge portion protrudes from a side of the portion affixed with the coil.

26. A loudspeaker comprising:

5 the loudspeaker diaphragm according to claim 20;  
a housing supporting the loudspeaker diaphragm;  
a voice coil affixed to the loudspeaker diaphragm; and  
a magnetic circuit.

10 27. The loudspeaker according to claim 26, wherein  
the magnetic circuit includes at least two magnets placed  
at both sides with respect to a vibrating direction of the  
loudspeaker diaphragm so as to sandwich the voice coil.

15                   28. An electronic device comprising the loudspeaker  
according to claim 27.

29. The loudspeaker according to claim 26, wherein  
said at least two magnets are placed so as to be magnetized  
20 in directions opposite to each other with respect to a vibrating  
direction of the loudspeaker diaphragm.

30. An electronic device comprising the loudspeaker according to claim 29.

31. An electronic device comprising the loudspeaker according to claim 26.